SYSTEM: DEC SUBSYSTEM PROJECT: SRMS
ASS'Y NOMENCLATURE: DEC PANEL ASS'Y P/N: 51140E391

SHEET: RATIONALE FOR ACCEPTANCE FAILURE EFFECT HOWR / FUNC. FAILURE HODE HAME, GTY, & **FMEA** FMEA 2/1R AUD DRAWING REF. REV. SCREENS: A-PASS, B-PASS, C-PASS REF. CRITICALITY END ITEM CAUSE DESIGNATION DESIGN FEATURES CAUSE (1) EE CANNOT MODE: HI FOWIRE 1300 4 LOSS OF SET CHING RIGIDIZE RELATS ARE ESTABLISHED RELIABILITY TYPES, PROCURED TO MIL-R-39016 AND SCREENED TO MASA ST-R-0001. RELAYS ARE MOUNTED ON A PRINTED CIRCUIT BOARD WHICH HAS A FULL WIDTH MACHINED RIGID/ BUARU. DERIGIDIZE DERIGIDIZE 01Y-1 AND ARM WILL GO COHMAND ED 94385. INTO SAFING. ALLMINIUM SUPPORT FRAME. THE FRAME ENGAGES IN MACHINED GUIDEWAYS IN THE ELECTRONICS PACKAGE. THIS CONFIGURATION AND/OR ALL COMPUTER PERMANENT SUPPORTED MODES HARDWIRE ENSURES GOOD VIBRATION DAMPING AND HEAT TRANSFER. LOST. SAFING. EEE PARTS HAVE BEEN SELECTED AND CONTROLLED IN ACCORDANCE WITH CAUSE (2) EE CANHOT SPAR-RMS-PA.003. THES DOCUMENT DEFINES THE PROGRAM CAUSE(S): (1) RELAY KI REQUIREMENTS FOR MONITORING AND CONTROLLING EEE PARTS. THE RIGIDIZE/ REQUIREMENTS ENCLUDE PARTS SELECTION TO AT LEAST "ESTABLISHED FAILS OPEN. DERIGIDIZE. ARM RELIABILITY" LEVELS, AND ADEQUATE DERATING OF PART STRESS LEVELS. PROCEDURES AND ACTIVITIES ARE SPECIFIED TO ENSURE AT WILL LIMP WHEN LEAST EQUIVALENT QUALITY FOR NONSTANDARD AND IRREGULAR PARTS. RIGID COMMANDED BUT RELIABILITY ANALYSIS HAS CONFIRMED NO PARTS WITH GENERICALLY ÀÌĠID/DERIG EE WILL NOT HIGH FAILURE RATES. AEROSPACE DESIGN STANDARDS FOR DETAILING CONTACT D/C. RESPOND. LIMP ELECTRONIC PARTS PACKAGING, MOUNTING AND CONDITION WILL STRUCTURAL/MECHANICAL/INTEGRITY OF ASSEMBLIES ARE APPLIED. SUCH DESIGN HAS BEEN REVIEWED AND FOUND SATISFACTORY THROUGH REMAIN UNTIL (3) SAFING THE DESIGH AUDIT PROCESS, INCLUDING THE USE OF RELIABILITY, MAINTAINABILITY AND SAFETY CHECKLISTS, MATERIAL SELECTION AND USAGE CONFORMS TO SPAR-SG.368 WHICH IS EQUIVALENT TO THE NASA MATERIALS USAGE REQUIREMENTS, WORST C RIG SWITCH CONTACT O/C. RELEASED CAUSE (3) PERMANENT CONDUCTED TO ENSURE THAT PERFORMANCE CAN BE MET UNDER WORST CASE TEMPERATURE AND AGING EFFECTS. EEE PARTS STRESS ANALYSIS HAS BEEN COMPLETED AND COMFIRMS THAT THE PARTS MEET THE HARDWIRE SAFING. ALL COMPUTER DENATING REQUIREMENTS. SUPPORTED MODES LOST. PRINTED CINCUIT BOARD DESIGNS HAVE BEEN REVIEWED TO ENSURE ADEQUATE CIRCUIT PATH WIDTH AND SEPARATION AND TO CONFIRM WORST CASE APPROPRIATE DIMENSIONS OF CIRCUIT SOLDER PADS AND OF COMPONENT HOLE PROVISIONS. UNEXPECTED PAYLOAD MOTION. PARTS MOUNTING METHODS ARE CONTROLLED IN ACCORDANCE WITH MSFC-SID-136 AND CAE PD93489. THESE DOCUMENTS REQUIRE INCOMPLETE RIGIDIZĂTION. APPROVED-MOUNTING METHODS, STRESS RELIEF, AND COMPONENT LOSS OF COMPUTER SUPPORTED DRIVE WHERE APPLICABLE, DESIGN DRAWINGS AND DOCUMENTATION GIVE CLEAR HODES. IDENTIFICATION OF HANDLING PRECAUTIONS FOR ESD SENSITIVE CREW ACTION PARTS. REQ. BOARD ASSEMBLY DRAWINGS INCLUDE THE REQUIREMENT FOR SOLDERING REDUNDANT PATHS STANDARDS IN ACCORDANCE WITH NHB 5300.4(3A) AND JSC 08800A. REMAINING 1) MANUAL EE MODE RELEASE. 2) BACKUP EE RELEASE.

RMS/D&C - 254

CIL REV: 4

DATE: 24 JUL 91

## CRITICAL ITEMS LIST

ITICAL IT	emo list	PR As	OJECT: SRMS S'Y NOMENCLATURE: <u>De</u>	C PAREL SYSTEM: DEC SUBSYSTEM ASS'Y P/N: 51720E394 SHI	EET:
HEA FHEA REV.	NAME QTY & DRAWING REF. DESIGNATION	FAILURE MODE AND CAUSE	FAILURE EFFECT ON END ITEM	HDWR / FUNC. RATIONALE FOR ACCEPTANCE 2/1R CRITICALITY SCREENS: A-PASS, B-PASS, C-PASS	
1300 4	HAROWIRE SUITCHING BOARD. DIV-1 ED 94385.	MODE: LOSS OF RIGID/ DERIGIDIZE COMMAND AND/OR PERNAMENT HARDWIRE SAFING.  CAUSE(S): (1) RELAY K1 FAILS OPEN.  (2) RIGID/DERIG CONTACT O/C.  (3) SAFING CONTACT O/C.	CAUSE (1) EE CANNOT RIGIDIZE DERIGIOTZE AND ARM WILL GO INTO SAFING. ALL COMPUTER SUPPORTED MODES LOST.  CAUSE (2) EE CANNOT RIGIDIZE/ DERIGIDIZE. ARM WILL LIMP WHEN RIGID COMMANDED BUT EE WILL NOT RESPOND. LIMP CONDITION WILL RIG SWITCH RELEASED  CAUSE (3) PERMANENT HARDWIRE SAFING. ALL COMPUTER SUPPORTED MODES LOST. WORST CASE UNEXPECTED PAYLOAD MOTION. INCOMPLETE RIGIDIZATION. LOSS OF COMPUTER SUPPORTED DRIVE HODES. CREW ACTION REO. REDUNDANT PATHS REMAINING 1) MANUAL EE MODE RELEASE. 2) BACKUP EE RELEASE.	THE HARDWARE ITEM IS SUBJECTED TO THE FOLLOWING ACCEPTANCE ENVIRONMENTAL TESTING AS PART OF THE DEC PAMEL.  O VIBRATION: LEVEL AND DURATION - REFERENCE TABLE 1  O THERMAL: +100 DEGREES F TO +10 DEGREES F 2 CYCLES (9.5 MRS PER CYCLE)  THE DEC PAMEL ASSEMBLY IS FURTHER TESTED AS PART OF THE RMS SYSTEM (TPS18 RMS STRONGSACK TEST AND TPS52 FLAT FLOOR TEST) WHICH VERIFIES THE ABSENCE OF THE FAILURE MODE.  OUALIFICATION TESTS  THE DEC PAMEL HAS BEEN SUBJECTED TO THE FOLLOWING QUALIFICATION TEST ENVIRONMENT:  O VIBRATION TEST ENVIRONMENT:  O VIBRATION: 200/11MS - 3 AXES (6 DIRECTION)  O THERMAL: 130 DEGREES F TO -23 DEGREES F (12 MRS PER CYCLE) (6 CYCLES)  O HUMIDITY: 95X (120 DEGREES F TO B2 DEGREES F CYCLE IN 16 MRS) 10 CYCLES TOTAL  O EMC: M1L-STD-461 AS MODIFIED BY SL-E-0002 (TEST CIC CEG, CSO1(DCAC), CSO2, CSO6, REO2 (B/N), RSO2, RSO3, RSO4)  REO2 (B/N) RSO2, O3, O4)  FLIGHT CHECKOUT  PORS OPS CHECKLIST (ALL VEHICLES) JSC 16987	

PROJECT: SRMS ASS'Y NOMENCLATURE: DEC PANEL

A MARDURE SUITCHING BOAD.  OF 94385.  ANDOR PERMANENT MARDURE SAFING. ALL COMPUTER SAFING.  CAUSE (2) REGISTERING COMPANDED BUT SEE SAFING. ADD INSPECTION VERIFIES THAT ALL PARTS RECEIVED ARE AS SAFING. ADD INSPECTION VERIFIES THAT ALL PARTS RECEIVED ARE AS SAFING. ADD INSPECTION VERIFIES THAT ALL PARTS RECEIVED ARE AS SAFING. ADD INSPECTION VERIFIES THAT ALL PARTS RECEIVED ARE AS SAFING. ADD INSPECTION VERIFIES THAT ALL PARTS RECEIVED ARE AS SAFING. ADD INSPECTION VERIFIES THAT ALL PARTS RECEIVED ARE AS SAFING. ADD INSPECTION VERIFIES THAT ALL PARTS RECEIVED ARE AS SAFING. ADD INSPECTION VERIFIES THAT ALL PARTS RECEIVED ARE AS SAFING. ADD INSPECTION VERIFIES THAT ALL PARTS RECEIVED ARE AS SAFING. ADD INSPECTION VERIFIES THAT ALL PARTS RECEIVED ARE AS SAFING. ADD INSPECTION VERIFIES THAT ALL PARTS RECEIVED ARE AS SAFING. ADD INSPECTION VERIFIES THAT ALL PARTS RECEIVED ARE AS SAFING. ADD INSPECTION VERIFIES THAT ALL PARTS RECEIVED ARE AS SAFING. ADD INSPECTION VERIFIES THAT ALL PARTS RECEIVED ARE AS SAFING. ADD INSPECTION OF THAT ALL PARTS RECEIVED ARE AS SAFING. ADD INSPECTION OF THAT ALL PARTS RECEIVED ARE AS SAFING. ADD INSPECTION OF THAT ALL PARTS RECEIVED ARE AS SAFING. ADD INSPECTION OF THAT ALL PARTS RECEIVED ARE AS SAFING. ADD INSPECTION OF THAT ALL PARTS RECEIVED ARE AS SAFING. ADD INSPECTION OF THAT ALL PARTS RECEIVED ARE AS SAFING. ADD INSPECTION OF THAT ALL PARTS RECEIVED ARE AS SAFING. ADD INSPECTION OF THE ADDRESS OF THE	FMEA FME	. DRAWING REF.	FAILURE HODE	FAILURE EFFECT ON	HDWR / FUNC. RATIONALE FOR ACCEPTANCE
SUITCHING BOARD. OIT-I ED 74385.  DENIGION PERIODIZE ED 74385.  CAUSE (2) CAUSE (3) DENIGION PERIODIZE CONTACT O/C.  (3) SAFING CONTACT O/C.  (3) SAFING CONTACT O/C.  CAUSE (3) DENIGION PERIODIZE CAUSE (3) DENIGION PERIODIZE CAUSE (3) DENIGION PERIODIZE CONTACT O/C.  CAUSE (3) DENIGION PERIODIZE CONTACT O/C.  CAUSE (3) DENIGION PERIODIZE CONTACT O/C.  AND STREEMING BOAT DENIGION PORT TO THE MANUFACTURE AND ASSERBLY AS APPROPRIATE TO THE MANUFACTURE OF THE MANUFACTURE PROCESSING IS PRIFECT CONTACT BOAT DISSPECTION FOR TRACK SEPARATION, DAMAGE CONTACT O/C.  RECUMANT PATHS RECUMENT SAF TOOL TO THE MANUFACTURE AND STREEM PERIODIZE TO THE PART SAF TOOL TO THE MANUFACTURE AND SCREEMED AND THE PART I RECEIVED AND A RANDONITY OF PARTS RECEIVED.  WIRE 1S PROCURED TO SAF THE PART I RECEIVED AND A RANDONITY OF PARTS RECEIVED.  WIRE 1S PROCURED TO THE PART SAFE TOOL TO THE PART SA		DESIGNATION	CAUSE	END ITEM	CRITICALITY SCREENS: A-PASS, B-PASS, C-PASS
A TEST READINESS REVIEW (TRR) UNICH INCLUDES VERIFICATION OF TEST PERSONNEL, TEST DOCUMENTS, TEST EQUIPMENT CALIBRATION/ VALIDATION STATUS AND HARDWARE CONFIGURATION IS CONVENED BY QUALITY ASSURANCE IN CONJUNCTION WITH ENGINEERING, RELIABILITY, CONFIGURATION CONTROL, SUPPLIER AS APPLICABLE, AND THE GOVERNMENT REPRESENTATIVE, PRIOR TO THE START OF ANY FORMAL TESTING (ACCEPTANCE OR QUALIFICATION).  ACCEPTANCE TESTING (ATP) INCLUDES AMBIENT PERFORMANCE,	1300 4	SWITCHING BOARD. OTY-1	LOSS OF TRIGID/ DERIGIDIZE COMMAND AND/OR PERMANENT HARDWIRE SAFING.  CAUSE(S): (1) RELAY K1 FAILS OPEN.  (2) RIGID/DERIG CONTACT O/C.	EE CANNOT RIGIDIZE DERIGIDIZE AND ARN WILL GO INTO SAFING. ALL COMPUTER SUPPORTED MODES LOST.  CAUSE (2) EE CANNOT RIGIDIZE/ DERIGIDIZE, ARM WILL: LIMP WHEN RIGID COMMANDED BUT EE WILL MOT RESPOND. LIMP CONDITION WILL RIG SWITCH RELEASED  CAUSE (3) PERNAMENT HARDMIRE SAFING. ALL COMPUTER SUPPORTED MODES LOST. WORST CASE UNEXPECTED PAYLOAD MOTION. INCOMPLETE RIGIDIZATION. LOSS OF COMPUTER SUPPORTED DRIVE MODES. CREW ACTION REQ. REDUNDANT PATHS RENATHING 1) MANUAL EE MODE RELEASE. 2) BACKUP EE	EEE PARTS INSPECTION IS PERFORMED AS REQUIRED BY SPAR-RHS-PA.DOS. EACH EEE PART IS QUALIFIED AT THE PART LEVEL TO THE REQUIRENEMIS OF THE APPLICABLE SPECIFICATION. ALL EEE PARTS ARE 100% SCREENED AND BURNED IN, AS A MINIMAN. AS REQUIRED BY SPAR-RHS-PA.DOS. BY THE SUPPLIER. ADDITIONALLY, EEE PARTS ARE 100% RE-SCREENED IN ACCORDANCE WITH REQUIRENEMIS, BY AN INDEPENDENT SPAR APPROVED TESTING FACILITY. DPA IS PERFORMED AS REQUIRED BY PA.DOS ON A RANDOMLY SELECTED SX OF PARTS, MAXIMON S PIECES, MINIMAN 3 PIECES FOR EACH LOT MUMBER/DATE CODE OF PARTS RECEIVED.  WIRE IS PROCURED TO SPECIFICATION MIL-W-22759 OR MIL-W-81381 AND INSPECTED AND TESTED TO MASA JSCHOODS STANDARD MUMBER 95A.  RECEIVING INSPECTION VERIFIES THAT ALL PARTS RECEIVED ARE AS IDENTIFIED IN THE PROCUBEMENT DOCUMENTS, THAT NO PHYSICAL DAMAGE HAS OCCURRED TO PARTS DURING SHIPMENT, THAT THE RECEIVING DOCUMENTS PROVIDE ADEQUATE TRACEABILITY INFORMATION AND SCREENING DATA CLEARLY IDENTIFIES ACCEPTABLE PARTS.  PARTS ARE INSPECTED THROUGHOUT MANUFACTURE AND ASSEMBLY AS APPROPRIATE TO THE MANUFACTURING STAGE COMPLETED. THESE INSPECTIONS INCLUDE,  PRINTED CIRCUIT BOAD INSPECTION FOR TRACK SEPARATION, DAMAGE AND ADEQUACY OF PLATED THROUGH HOLES,  COMPONENT MOUNTING INSPECTION FOR CORRECT SOLDERING, MIRE LOOPING STAPPING ETC. OPERATORS AND INSPECTIONS ARE TRAINED AND CETTIFED TO MASA NHB 5300.4(3A) STANDARD, AS MODIFIED BY JSC 008000A.  CONFORMAL COATING INSPECTION FOR ADEQUATE PROCESSING IS PERFORMED USING ULTRAVIOLET LIGHT TECHNIQUES.  POST P.C. BD. INSTALLATION INSPECTION, CLEANLINESS AND MORKMANSHIP (SPAR/GOVERNMENT REP. MANDATORY INSPECTION POINT)  P.C. BD. INSTALLATION INSPECTION, AS BUILD CONFIGURATION VERTIFICATION TO AS DESIGN ETC. (SPAR/GOVERNMENT REP MANDATORY INSPECTION POINT)  A TEST READINESS REVIEW (TRR) UHICH INCLUDES VERIFICATION OF TEST PERSONNEL, TEST DOCUMENTS, TEST EQUIPMENT CALIBRATION/VALIDATION STATUS AND HADADARE CONFIGURATION WALLDARY CONFIGURATION CONTICUL WITH EMBLIED HEAD OF ANY FORMAL TESTING (ACCEPTANCE OR QUALIFICATION).  ACCE

PREPARED BY:

			S'Y HOMENCLATURE: DE	HDWR / FUNC.	RATIONALE FOR ACCEPTANCE
HEA FHEA EF. REV.	NAME GTY & DRAWING REF. DESIGNATION	FAILURE MODE AND CAUSE	FAILURE EFFECT ON END ITEM	2/18 CRITICALITY	SCREENS: A-PASS, B-PASS, C-PASS
1300 4	HARDWIRE SWITCHING BOARD. QTY-1 ED 94385.	MODE: LOSS OF RIGID/ DERIGIDIZE COMMAND AND/OR PERMANENT HARDNIRE SAFING. CAUSE(S): (1) RELAY K1 FAILS OPEN.  (2) RIGID/DERIG CONTACT O/C.  (3) SAFING CONTACT O/C.	CAUSE (1) EE CANNOT RIGIDIZE DERIGIOIZE AND ARM WILL GO INTO SAFING. ALL COMPUTER SUPPORTED MODES LOST.  CAUSE (2) EE CANNOT RIGIDIZE. ARM WILL LIMP WHEN RIGIDIZE. ARM WILL LIMP WHEN RIGITO COMMANDED BUT EE WILL NOT RESPOND. LIMP CONDITION WILL RIG SWITCH RELEASED CAUSE (3) PERMANENT HAROMIRE SAFING. ALL COMPUTER SUPPORTED MODES LOST.  WORST CASE UNEXPECTED PAYLOAD MOTION. INCOMPLETE RIGIDIZATION. LOSS OF COMPUTER SUPPORTED DRIVE MODES. CREW ACTION REQ. REDUNDANT PATHS REMAINING 1) MANUAL EE MODE RELEASE. 2) BACKUP EE RELEASE.	MANDATORY T INTEGRATION PERFORMED A GROUNDING C INSPECTION SUB-SYSTEM PERFORMANCE SRMS SYSTEM SUBASSEMBLE INSPECTIONS INCLUDES GE INTERFACE C	WIBRATION TESTING, (SPAR/GOVERNMENT REP. MSPECTION POINT).  OF DAC PAMEL, RHC, THC AND MCJU, INSPECTIONS ARE IT EACH STAGE OF INTECRATION, UNITED INCLUDES HECKS, INTER CONNECT CABLE VERIFICATION, CONNECTOR FOR BEHT OR PUSHBACK CONTACTS ETC.  PERFORMANCE TESTING (ATP), INCLUDES AN AMBIENT ETEST. (MANDATORY INSPECTION POINT).  IS INTEGRATION, THE INTEGRATION OF MECHANICAL ARM IES AND THE FLIGHT CABLE EQUIPMENT TO FORM THE SRMS. IS ARE PERFORMED AT EACH PHASE OF INTEGRATION WHICH ROUNDING CHECKS, THRU WIRING CHECKS, WIRING ROUTING, CONNECTORS FOR BENT OR PUSH BACK CONTACTS ETC.  MS TESTING - STRONGBACK AND FLAT FLOOR AMBIENT E TEST. (SPAR/GOVERNMENT REP MANDATORY INSPECTION

## CRITICAL ITEMS LIST

PROJECT TO THE ASSIST NOMENEL ASSIST NOMENEL TO THE DECLETANEL

SYSTEM: DEC SUBSYS

FMEA REF.	FHEA REV.	DRAWING REF.	FAILURE MODE AND CAUSE	FAILURE EFFECT ON END ITEM	HDWR / FUNC. RATIONALE FOR ACCEPTANCE 2/IR CRITICALITY SCREENS: A-PASS, B-PASS, C-PASS
1300	4	DESIGNATION  HARDWIRE SWITCHING BOARD. GIV-1 ED 94385.	MODE: LOSS OF RIGID/ DERIGIDIZE COMMAND AND/OR PERMANENT HARDWIRE SAFING.	CAUSE (1) FT PANNOT 13:1012E bLRIGIDIZE AND ARM WILL GO INTO SAFING. ALL COMPUTER SUPPORTED MODES LOST.	FAILURE HISTORY  NO EEE PARTS FAILURES HAVE OCCURRED SUBSEQUENT TO ASSEMBLY OF PARTS.
			CAUSE(S): (1) RELAY K1 FAILS OPEN.  (2) RIGID/DERIG CONTACT O/C.  (3) SAFING CONTACT O/C.	CAUSE (2) EE CANNOT RIGIDIZE/ DERIGIDIZE, ARM WILL LIMP WHEN RIGID COMMANDED BUT EE WILL NOT RESPOND. LIMP CONDITION WILL RIG SWITCH RELEASED	
				CAUSE (3) PERNAMENT HARDWIRE SAFING. ALL COMPUTER SUPPORTED MODES LOST.	•
				WORST CASE UNEXPECTED PAYLOAD MOTION. INCOMPLETE RIGIDIZATION. LOSS OF COMPUTER SUPPORTED DRIVE MODES. CREW ACTION REQ.	
			· ·	REDUNDANT PATHS REMAINING  1) MANUAL EE MODE RELEASE.  2) BACKUP EE RELEASE.	
				,	DATE: 22 NO C1 C1 PE

PREPARED BY:

MFWG

SUPERCEDING DATE: 03 OCT 86

RMS/D&C - 258

DATE: 24 JUL 91

CIL REV: 4

SYSTEM: DEC SUBSYSTEM ASS'Y P/N: 51140E391 PROJECT: SRMS ASS'Y NOMENCLATURE: DEC PANEL

\_ SHEET: \_\_6

FHEA REF.	FMEA REV.	MAME, GTY, & Drawing Ref. Designation	FAILURE MODE AND CAUSE	FAILURE EFFECT ON END ITEM	HDWR / FUNC. RATIONALE FOR ACCEPTANCE 2/1R CRITICALITY SCREENS: A-PASS, B-PASS, C-PASS
1300	4	HARDWIRE SWITCHING BOARD. GIY-1 ED 94385.	MODE: LOSS OF REGID/ EGIDIZE COMMAND AMD/OR PERMANENT MARDWIRE SAFING.	CAUSE (1) EE CANNOT RIGIDIZE DERIGIOIZE AND ARM WILL GO INTO SAFING. ALL COMPUTER SUPPORTED HODES LOST.	OPERATIONAL EFFECTS  UNABLE TO REGEDIZE/DERIGIDIZE. IF FAILURE OCCURS DURING REGEDIZE SEQUENCE. THE CARRIAGE WILL NOT COMPLETELY REGEDIZE AND ARM WILL REMAIN LIMP OF THE BE.  CREW ACTION  CREW ACTION
			CAUSE(S): (1) RELAY K1 FAILS OPEN.  (2) RIGID/DERIG CONTACT O/C.  (3) SAFING CONTACT O/C.	CAUSE (2) EE CANNOT RIGIDIZE/ DERIGIDIZE. ARM WILL LIMP WHEN RIGID COMMANDED BUT EE WILL NOT RESPOND. LIMP CONDITION WILL RIGIS WITCH RIGID WITLL RIGID WITCH REGENERY	THE EE MODE SWITCH SHOULD BE TURNED OFF. CREW SHOULD OBSERVE THE CAPTURE SEQUENCE AND DETERMINE THAT THE GRAPPLE FIXTURE HAS BEEN DRAWN FAR ENOUGH INTO THE EE TO PROHIBET PAYLOAD ROTATIONS. IF THE INTERFACE DOES NOT APPEAR RIGID, ATTEMPT TO RIGIDIZE IS WISUCCESSFUL, ATTEMPT RELEASE USING A PRIMARY EE MODE. IF SNARES OPEN, MANEUVER THE ARM AWAY FROM THE PAYLOAD. IF SNARES DON'T OPEN, ATTEMPT TO RELEASE IN BACKUP MODE. IF SNARES DON'T OPEN, ATTEMPT TO RELEASE IN BACKUP MODE. IF SNARES OPEN, MANEUVER ARM AMAY FROM THE PAYLOAD. MANEUVER ORBITER AWAY FROM PAYLOAD. IF SNARES CANNOT BE OPENED IN ANY HODE, THEN THE ARM/PAYLOAD COMBINATION CAN BE JETTISONED. SRMS D&C 1FM KIT AVAILABLE.
				CAUSE (3) PERMANENT HARDWIRE SAFING. ALL COMPUTER SUPPORTED MODES LOST.	CREW TRAINING  CREW TO BE TRAINED TO RECOGNIZE OFF NOMINAL OPERATION OF THE EE AND TO TURN MODE SWITCH TO OFF AFTER SPEC TIME AND MANEUVER THE ORBITER AWAY FROM A FREE FLYING PAYLOAD AT ANY TIME DURING ARM OPERATIONS.
				WORST CASE  UNEXPECTED PAYLOAD MOTION. INCOMPLETE RIGIDIZATIOM. LOSS OF COMPUTER SUPPORTED DRIVE	MISSION CONSTRAINT  WHEN CAPTURING A FREE FLYING PAYLOAD, THE EE MUST BE FAR ENOUGH AWAY FROM STRUCTURE TO PROHIBIT CONTACT REGARDLESS OF PAYLOAD ROTATIONS.
				MODES. CREW ACTION REG. REDUNDANT PATHS	OMRSD OFFLINE  EXERCISE RIGIDIZE/DERIGIDIZE COMMAND IN EE MANUAL MODE VERIFY VOLTAGES AT D&C PANEL OUTPUT. VERIFY HARDWIRE SAFING VOLTAGE AT D&C PANEL OUTPUT.
			<b> </b>	REMAINING  1) MANUAL EE MODE RELEASE.	DHRSD ONLINE INSTALLATION
				2) BACKUP EE RELEASE.	EXERCISE RIGIDIZE/DERIGIDIZE COMMAND IN EE MANUAL MODE VERIFY VOLTAGES AT LONGERON INTERFACE. VERIFY HARDWIRE SAFING VOLTAGE AT LONGERON INTERFACE.
					OMRSD ONLINE TURNAROUND  WITH EE MODE SWITCH IN MANUAL MODE  VERIFY RIGIDIZE /DERIGIDIZE FUNCTION  VERIFY COMPUTER SUPPORTED MODE CAN BE ENTERED

ITICA	L ITE	MO LIOT	PF AS	IOJECT: SRMS IS'Y NOMENCLATURE: <u>D</u> e	C PANEL	SYSTEM: D&C SUBSYSTEM ASS'Y P/N: 51140E391	SHEET:
THEA REF.	FMEA REV.	NAME QTY & DRAWING REF. DESIGNATION	FAILURE HODE AND CAUSE	FAILURE EFFECT ON END ITEM	HDWR / FUNC. 2/1R CRITICALITY	RATIONALE FOR ACCEPTANCE SCREENS: A-PASS, B-PASS, C-PASS	
1300	•	HARDWIRE SWITCHING BOARD. GIY-1 ED 94385.	MODE: LOSS OF RIGID! DERIGIDIZE COMMAND AND/OR PERMANENT HARDWIRE SAFING.	CAUSE (1) EE CANNOT RIGIDIZE DERIGIDIZE AND ARM WILL GO INTO SAFING. ALL COMPUTER SUPPORTED MODES LOST.			
ļ		:	CAUSE(S): (1) RELAY K1 FAILS OPEN.	CAUSE (2) EE CANNOT RIGIDIZE/ DERIGIDIZE. ARM WILL LIMP WHEN			
			(2) RIGID/DERIG CONTACT O/C.	RIGID COMMANDED BUT EE WILL NOT RESPOND. LIMP CONDITION WILL			
			(3) SAFING CONTACT O/C.	REMAIN UNTIL RIG SWITCH RELEASED			
		:	:	CAUSE (3) PERMANENT HARDWIRE SAFING. ALL COMPUTER SUPPORTED MODES LOST.			
		1		WORST CASE			
				UNEXPECTED PAYLOAD MOTION. INCOMPLETE RIGIDIZATION. LOSS OF COMPUTER SUPPORTED DRIVE MODES.	·	,	
				CREW ACTION REQ.			•
			,	REDUNDANT PATHS REMAINING			
			,	1) MAHUAL EE MODE RELEASE.			
				2) BACKUP EE RELEASE.	·		
	i						

PREPARED BY:

MFWG

SUPERCEDING DATE: 03 OCT 66

RMS/D&C - 260

DATE: 24 JUL 91

CIL REV: 4